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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/334,049	06/15/1999	ARIEL BEN-PORATH	3656/PDC	4880

32588 7590 10/18/2002

APPLIED MATERIALS, INC.  
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SANTA CLARA, CA 95050

EXAMINER

BALI, VIKKRAM

ART UNIT

PAPER NUMBER

2623

DATE MAILED: 10/18/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/334,049

Applicant(s)

BEN-PORATH, ARIEL

Examiner

Vikram Bali

Art Unit

2623

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-30 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

In response to the amendment filed on 08/13/2002, all amendments to the claims have been entered and action follows:

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mizuno (US 6047083) in view of Automatic defect classification for semiconductor manufacturing, by Paul et al, Machine Vision and Application, 1997, pp 201-213.

With respect to claim 1, Mizuno discloses:

Imaging the surface to form a defect image, (see col. 4, lines 6-8, wherein the image of the wafer is formed using the SEM);

Classifying the defect as being in one of a predetermined number of core classes of defects using a core classifier, (see col. 3, lines 39-41); and

Classifying the defect as being in one of an arbitrary number of variant subclasses using a specific adaptive classifier associated with the one core class, (see col. 3, lines 42-

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44). However, he fails to disclose: the specific adaptive classifier being trained by the user with a set of sample defect images; as claimed. Paul teaches the limitation of specific adaptive classifier being trained by the user with a set of sample defect image, (training the classifier using the training images with the help of user (see col. 2 of page 208, lines 8-15) as claimed).

Therefore, it would have been obvious to ordinary skilled in the art at the time of invention to combine the two references as they are analogous because they are solving the similar problem of classifying the defects. The training of the classifiers using the defect images can be incorporated into the Mizuno's system as taught by Paul. This combination provides a classification system that will classify the defects in to the classes and sub-classes using the classifiers and the training to the classifier can be done by using the training images as traditionally done (see page 208, col. 1 last 5 lines of Paul).

With respect to claims 2-5 the rejections are maintained and incorporated by references as set forth in prior office action (paper # 3).

3. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mizuno (US 6047083) in view of Applicants prior admitted art.

With respect to claim 6 the rejections are maintained and incorporated by references as set forth in prior office action (paper # 3).

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4. Claims 7-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mizuno (US 6047083) in view of Nakamura et al (US 5172421).

With respect to claims 7-9 the rejections are maintained and incorporated by references as set forth in prior office action (paper # 3).

Claims 10-18 and 22-30 are rejected as claims 1-9 as claims 10-18 and 22-30 are claiming similar subject matter as claimed in claims 1-9.

Claims 19, 20 and 21 are rejected as claims 1, 8 and 9 as claims 19, 20 and 21 are claiming similar subject matter as claimed in claims 1, 8 and 9.

### ***Response to Arguments***

5. Applicant's arguments with respect to claims 1-30 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within

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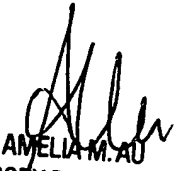
TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vikkram Bali whose telephone number is 703.305.4510. The examiner can normally be reached on 7:30 AM - 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amelia Au can be reached on 703.308.6604. The fax phone numbers for the organization where this application or proceeding is assigned are 703.872.9314 for regular communications and 703.872.9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703.306.0377.

Vikkram Bali  
Examiner  
Art Unit 2623

  
AMELIA M. AU  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600

vb  
October 17, 2002